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Applications of outsourcing theory to collaborative purchasing and licensing

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Abstract

Describes the various types of outsourcing arrangements used in information systems, and explains some of the theoretical perspectives invoked to explain the behaviour of client, supplier, and intermediary organisations, such as client consortia. Examines some of the problems of outsourcing in the public sector, and suggests how some of the theoretical perspectives might illuminate some of the problems which have emerged in the purchasing and licensing of electronic content.

Introduction

Many of the collaborative deals for purchasing electronic information resources inevitably mean that some of the work that might be done in-house on review and monitoring of library resources has been delegated to an outside agency. There are benefits, obviously, in such deals, in providing access to resources that would otherwise be beyond the budget capabilities of an institution. On the other hand, some of the competencies that are possibly less obvious in normal collection development activities may be lost when purchasing work is effectively outsourced. Information technology (IT) outsourcing is a major part of the information management scene in many private and public sector bodies. It is defined, with some variations, as a decision taken by an organisation to contract out or sell all, or some of the organisation's IT assets, people or activities to a third party supplied, who in exchange provides and manages assets and services, for an agreed fee or other monetary arrangement over an agreed time period (Kern & Willcocks, 2000). While collaborative purchasing, regional or national deals, do not involve transfer of IT assets, there is some delegation of activities, or re-arrangement of activities which involved some changes to the way library services are organised, the type of competencies required, and relationships with suppliers. Outsourcing theory can be used to explore some of the implications of these contractual arrangements. The aim of this paper is to outline the various theoretical perspectives, and discuss their applicability to collaborative purchasing.

Aims of outsourcing

The type of outsourcing favoured is partly governed by the underlying aims for outsourcing in the first place. The aims are usually concerned with better cost control, which assumes that in-house costs are known precisely beforehand, although that is not always the case. In some cases the outsourcing is concerned more with gaining access to technical expertise which may not be available in the outsourcing organisation. There may be an emphasis on time saving for some organisations (cost control in terms of staff

time costs). Increasingly, perhaps, many outsourcing relationships are becoming partnerships as outsourcing becomes an accepted way of conducting business, and relationships between those involved develop over time (Grover, Teng, & Cheon, 1998).

Types of outsourcing

Currie & Willcocks (1998) distinguish four types of outsourcing in their research on outsourcing approaches:

- total outsourcing
- multiple supplier outsourcing
- joint venture/strategic alliance outsourcing
- insourcing

Total outsourcing involves developing a partnership with a single supplier, with IT perceived as a service or support function. The aim is usually to reduce IT costs, or eliminate a problem IT function, but the outsourcing organisation retains strategic control. Multiple supplier sourcing is less concerned with partnerships as the aim is to foster innovation and create competition between suppliers, although it is recognised that suppliers will form alliances among themselves for bidding purposes. Contracts are usually short-term, and the client co-ordinates a portfolio of services from various suppliers, with the aim of retaining strategic control. Joint venture/strategic alliance outsourcing is more concerned with development of new knowledge for the client, and there is more emphasis on shared risks and rewards. Sometimes various organisations will foster the creation of a supplier company to which they will outsource work, but still have more control than they would do in a multiple supplier or total outsourcing arrangement. Insourcing, or keeping the IT department and services in-house, occurs when organisations view IT as core to their business, or when they mistrust possible suppliers. A more recent type of outsourcing is the ASP (application service provider) model, where organisations purchase software use on an 'as and when' basis (Kern, Kreijger, & Willcocks, 2002).

The above list of types of outsourcing arrangements describes the various formats which have emerged. Reasons for outsourcing vary, and the conceptual frameworks (Grover et al., 1998; Elitzur & Wensley, 1998; Hancox & Hackney, 2000; Kern & Willcocks, 2000) which have been used to explain the practice and degree of success obtained include:

- *core competencies*
- *resource-based theory*
- *resource-dependent theory*
- *transaction cost theory (TCT)*
- *agency cost*
- *partnerships*
- *game theory*

As might be expected, none of these approaches explains all the behaviour observed in practice in outsourcing contracts, although most explain some of the behaviour, and help to predict the likely success of some outsourcing arrangements.

Core competencies

How core competencies are defined is unclear, but the essence is that core competencies should be kept in-house, but that other things that the organisation does, which are not deemed core, or critical to its mission or function, should be considered for outsourcing. Technical services such as bookbinding have been outsourced by many libraries for many years, and few would argue, except for particular specialist libraries, that bookbinding is not usually a core competence. Cataloguing, on the other hand, might be viewed differently, although many libraries buy in records or outsource retrospective catalogue conversion. Cataloguing might be deemed a 'core competence' of librarians, but whether that requires them to conduct it individually, site by site, is debatable. The perspective of core and non-core competencies starts to look less useful when the mission and main functions of the client organisation are changing, along with the skills required of its staff. The core competency perspective is useful in prompting serious consideration about the functions which are truly cost-effectively done in-house, and those which could be outsourced, without any loss to future requirements in expertise. The core competency perspective is less useful when some of the functions are core, but some, or most of the tasks involved could be outsourced as it would be cheaper to do that. For purchasing arrangements, libraries often need to consider the effects on staff functions, of sharing or delegating the work of previewing serials prior to purchase with other members of a purchasing consortium.

Resource-based theory

According to resource based theory, organisations wish to maintain a distinctive product (competitive advantage) and will plug gaps in resources and capabilities in the most cost-effective manner to do so. Outsourcing of cataloguing is easier to rationalise using resource-based theory as this emphasises that cost-effective solutions are required to some of the major activities, in order to fulfil the main aim of the organisation (provide organised access to resources).

Resource-dependent theory

With resource dependent theory, the environment of the organisation is almost as important as the organisation itself. The principle is that organisations adopt strategies to gain access to critical resources, to stabilise relationships with the external environment and to secure survival. With this theory, collaborative licensing deals are easy to rationalise. Collaboration allows access to resources (more effectively and more efficiently than without), deals lessen the problems of negotiations with many publishers on an individual basis, and survival (managing diminishing budgetary resources) is more assured. Some individual choice over selection has gone, but more is gained for apparently less effort in staff time.

Transaction cost theory (TCT)

With TCT, a more conventional economic approach is used. Organisations may buy from the market, or develop in-house, and decisions are based on the relative cost, composed of the costs of production, and costs of the transaction, of the exchange. TCT considers the asset specificity (to what extent can an asset, such as specialised software or product, be redeployed), uncertainty in the environment, as well as the frequency of the

transaction. Taking a very simple example, is it better to use a breadmaker to make bread at home or buy bread in the supermarket? Having invested in the breadmaker, and gained some skills, can these skills (and the breadmaker) be used for other purposes (asset specificity)? How likely is that the supermarket where I would buy the bread would close, or alter its stocklines? And lastly, it would not be worth setting up special arrangements to buy a loaf of particular grade and quality for one individual, although a client with a large and frequent order arrangements might require special contract conditions (frequency of transaction).

For information services and systems the transaction costs concern the costs involved in setting up and monitoring the contract, as opposed to the costs of doing the work in-house and producing the service or product in-house. If the decision is made to outsource, then the aim is to reduce those transaction costs as much as possible, and that can be done by collaborative working with other institutions, who require a similar product or service, to share the work involved in setting up and monitoring the contract. The transaction cost theory (TCT) perspective is useful in examining the contributions to transaction costs, and how these might be reduced.

Agency cost theory (ACT)

Agency cost theory expands on one aspect of TCT, as it deals with the different perspectives of risk that client and supplier have, and differentiates between outcome-based contracts, and behaviour-based contracts. If the client distrusts the supplier then the extent of monitoring required will be greater for the client, than it would be if the client could wholly trust the supplier to deliver. The client has two main choices: a contract which stipulates payment by results (an outcome-based contract), or a contract that states the supplier should do certain things at stipulated times, or spend a certain amount of time on certain functions. If one cannot trust a supplier to deliver a product some months down the line, then it might pay to ensure that it looks as if they are doing something. On the supplier side, a behaviour-based contract at least allows them to claim that they did spend x hours on this task, even if the outcome could not be achieved as originally intended. Agency cost theory helps to distinguish the most productive and fairest method of minimising risks for both client and supplier.

Partnerships

Partnerships are not one theory but some of the outsourcing research has examined the development of trust between client and supplier, usually based on aspects of organisation theory, social exchange theory or social contract theory. Partnerships are not totally altruistic arrangements and there is usually some element of exchange (if you do this for me, I'll do that for you). One problem for public sector outsourcing arrangements is the need for transparency and accountability, which makes partnership working difficult to reconcile with the apparent prohibition on becoming too cosy with the outside supplier. Closer relationships were easier when common cultures were shared in an internal market (Hancox & Hackney, 2000)

Game theory

Game theory has its origin in economics, and has been used, for example, to develop concepts such as the evolutionary stable strategy for a species (Smith, 1982). Game theory applied to outsourcing uses the idea that it may make sense for one party to cheat on the other, but whether this is a successful strategy in the longterm depends on the reaction of the client. The evolution of co-operation (Axelrod, 1997) may depend on the results of several interactions (of the Prisoner's Dilemma format) in which two players have an opportunity to co-operate or defect, with different payoffs. The game theory perspective is a reminder that it is not necessarily in your partner's best interest to co-operate with you. The strategies of players (client and supplier) depend on their beliefs concerning the motives of the other, but the information game may be asymmetric in that one can cheat on the other.

Outsourcing information systems in the public sector

Case studies (Lacity & Willcocks, 1997) and analysis of outsourcing strategies (Cronk & Sharp, 1998) suggest that the following types of situation are common in the public sector environment:

- public sector IS managers are constrained by highly political influences and external stakeholders, as well as having to consider the internal constraints;
- senior government officials assume (often wrongly) that outsourcing to the private sector saves money;
- some public sector organisations can combine forces to act as a consortium purchasing client.

In some circumstances, the low risk route to outsourcing success depends on outsourcing IS activities that are technically mature, stable, not highly integrated and for which the supplier can achieve economies of scale, and can offer superior technical expertise for support. The organisation should practise hands-on management of the contract, which should be of a duration which matches the known requirements. In some cases the client (or consortium client) may possess expertise that the supplier does not possess and this should be recognised.

The type of interactions encountered in a relationship between client and supplier include (Kern & Willcocks, 2000)

- product/service exchange
- financial exchange
- service enforcement and monitoring
- communication/information exchange
- cultural adaptation
- investments in resources, knowledge and time
- sharing, and adaptation of vision
- social and personal bonds.

The research conducted by suggests that management efforts need to focus on the main game, the client's objectives, as set out in the contract. In time, the relationship should

evolve providing closer convergence and additional value in benefits to both, though at the danger of losing the focus on initial objectives.

Research on outsourcing in the library, information and archives sector in the UK has investigated some of the activities of library purchasing consortia (Ball & Pye, 2000) and later studies (Ball et al., 2002) have developed a decision matrix to assess the feasibility of outsourcing.

Developing a framework for purchasing and licensing of electronic information

Electronic information services and products are different in many respects from information systems purchases which are concerned to a greater extent with hardware and software support, although the problem of archiving means that hardware and software considerations do have to be included. As with information systems in general:

- library and information service managers are subject to
 - political influences (e.g. widening participation agendas may increase pressures for educational institutions to buy resources that can be networked for offcampus use)
 - external stakeholders (advisory or standard-setting bodies, for example)
 - internal constraints (a major difficulty with devolved budgeting)
- senior officials may assume that licensing deals and collaborative purchasing saves money (but take less account of the time required to arrange, monitor and evaluate the arrangements), as well as space, if electronic resources are purchased rather than print)
- public sector organisations in LIS can and do form consortia.

The PURCEL report(Education for Change Ltd for PURCEL consortium, 2000) identified the following issues at workshop discussions on purchasing and licensing of electronic resources in the higher education sector:

- HE sector wide issues (institutional missions and strategies, cultures of funding)
- Budgets, costs and value (attributing costs to devolved budgets, estimating and forecasting budgets for electronic resources, the year-end factor)
- Collection development policies (to be led by content or driven by format?)
- Pre-purchase evaluation
- Purchase decision making processes (who should be involved, complexity of deals, time factors)
- Post-purchase evaluation
- Licensing (failure to comply with model licence, bundling/unbundling of electronic and print)
- Role and tasks of the library staff (and to this should be added the role and tasks of the IT staff).

Many of these problems are ongoing and the JUSTEIS (Urquhart, 2002) report confirms the seemingly intractable nature of problems concerned with the publisher pricing models, site licences and digital preservation and archiving, with local collaboration and consortia dealing possibly detrimental to national deals. Using the interaction model

outlined above ((Kern & Willcocks, 2000), many of the difficulties between client (library/purchasing consortium) and the supplier (publisher) have focused on the

- product/service exchange (debates about bundling, unbundling and preservation)
- financial exchange (pricing models for electronic resources)
- service enforcement and monitoring (debates on standards for usage statistics).

Some, emphasis is apparent for:

- communication/information exchange
- cultural adaptation
- investments in resources, knowledge and time

although the concerns are often limited at this stage to the actual licensing arrangements, and often on the relationships within the consortia, and there has been less time to evaluate the impact on the users in higher and further education institutions.

The remaining types of interaction concern changing relationships between libraries and publishers and publishers and the partnership is strained when librarians face what are seemingly exorbitant rises in journal prices (Halliday & Oppenheim, 2001)

- sharing, and adaptation of vision
- social and personal bonds.

In these circumstances, with so many problems, the role of theory might be to crystallise the problem, and in doing so to move forward. Taking a few of the problems which emerged during the JUSTEIS work and reflect those reported in PURCEL, how does theory relate to these?

First - the problem of the pricing bands and catering for the needs of smaller institutions and the larger, often research-intensive institutions, means that there are different perspectives on the deal. The goals may be quite different as the smaller institutions may be operating more in resource-dependent theory mode, with greater emphasis on the need to cater for multiple stakeholders (further education colleges may cater for a wide variety of courses, and have a community role, for example). The smaller institutions wish to gain access to resources, and to ensure that they provide what is required for their users. Research-intensive institutions, and the departments within them, may be operating according to resource-based theory, where the aim is to gain a competitive advantage (over rival institutions) by entering into an outsourcing arrangement. They are looking for a cost-effective solution, just as the smaller institutions are, but the ultimate goals may be different. One would not want to suggest that both sets of partners in a consortium needs to operate using some of the game theory rules but they need to be quite clear about what they expect to gain from the consortium arrangement, as the consortium has to negotiate with publishers. Arguably, the licences should consider not just the bands, but the different goals that institutions joining one band may have from institutions that are likely to opt for another band.

Second, some of the problems are concerned with conditions for the purchasing deals. Individual institutions find these restrictive, but publishers, of course, demand some continuity in their funding. There are risks involved for both, and agency cost theory distinguishes between behaviour and outcome-based contracts. Perhaps a little more

consideration needs to be given to ways in which behaviour or actions on the part of both publishers and library consortia might help to build trust between them, as suggested by Russell (2001) (Le Moal, 2002).

Last, but not least, the costs of setting up and monitoring the arrangements. Certainly consortia purchasing reduces some costs in individual institutions but there are other staff costs that need to be considered when changing the way collection management is done. Transaction cost theory emphasises that transaction costs should be minimised, to a boring level, possibly (Fritsch et al., 2002) otherwise there is the danger that it would as cheap, if not cheaper, to bring back the operation in-house. Transaction cost theory also indicates that the cost of setting up an outsourcing arrangement is unlikely to be beneficial if it is not going to be a frequent occurrence. A difficulty with some of the regional deal-making is that there may be much staff time expended in such arrangements, and little to show for it if there is some regional reorganisation of institutions. The health sector provides a good example of that. Regional consortia were established to buy databases, using the Regional Health Authority structures as a basis. When the Department of Health reorganised, new arrangements had to be made.

Conclusions

Outsourcing arrangements vary considerably and the complication for consideration of the effects on the relationship between the library and the publisher is that many of the deals are done through intermediary organisations or library consortia. That in itself means that libraries are dealing with other libraries as well as with publishers, and there may be levels of outsourcing to be considered. First, when dealing with the consortium arrangement, the library may need to consider the effects on core competencies in terms of staff skills, as well as the different perspectives on the ultimate goal for the institution of the consortium arrangement. Second, when considering the arrangements between the consortium and the publisher supplier, various theories such as transaction cost theory, and agency cost theory help to illustrate some of the attitudes towards risk of the partners involved and the way the costs of negotiation might be minimised. There seems little need for partnership theories at this stage, but perhaps some of the social exchange ideas need to be explored if the library-publisher relationship is to be productive for both parties. Within their own institutions libraries increasingly need to consider the publishers in their midst, the staff and researchers who are publishing on their own pages, and exploring open access models of publishing. Perhaps partnerships need to be explored between libraries and their in-house publishers?

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